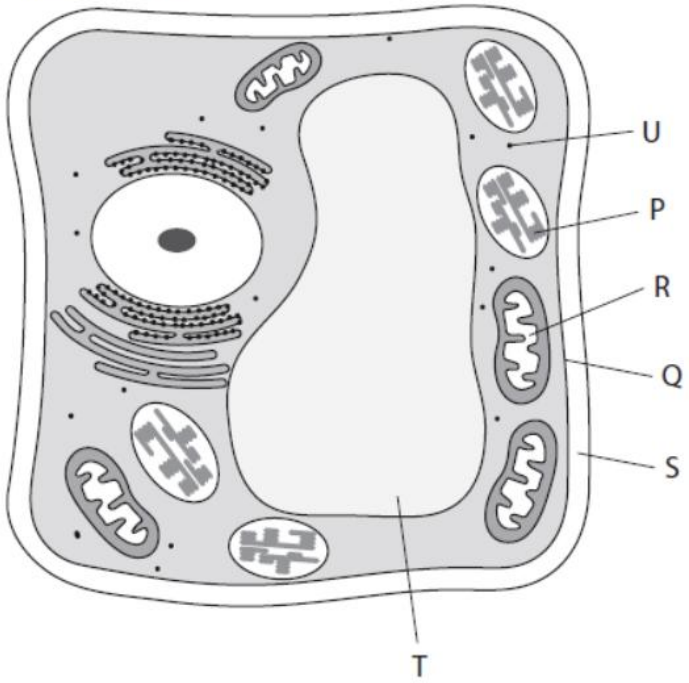
Rosary School – Marj Elhamam
Biology Quiz

No. of Pages: (5)	No. of Questions: (3)	Mark: (_____/16)
Name: _____		Date: / / 2025
Grade: 9( )		Duration: 15 min

Question one:

The diagram shows a plant cell with some structures labelled.



(i) Which structure is the site of photosynthesis?

- ☐ **A** P
- ☐ **B** Q
- ☐ **C** R
- ☐ **D** T

ii)

Which statement describes the effect of temperature on enzymes?

A. High temperatures denature enzymes making it difficult for substrate molecules to fit into the active site.

B. High temperatures denature enzymes making it easy for substrate molecules to fit into the active site.

C. Low temperatures denature enzymes making it difficult for substrate molecules to fit into the active site.

D. Low temperatures denature enzymes making it easy for substrate molecules to fit into the active site.

iii)

Which of the following correctly describes the effect of increasing temperature from 15°C to 30°C on an enzyme-controlled reaction?

	kinetic energy of enzymes and substrates	frequency of effective collisions	shape of active site
A	no change	decreases	denatured
B	increases	increases	denatured
C	increases	increases	no change
D	decreases	no change	no change

[3]

Question two:

Some students carried out an investigation into the effect of pH on the activity of amylase.

The students used the following method:

1. Add a drop of iodine to each well of a spotting tile
2. Set up three test tubes containing solutions as follows:
    - Buffer solution at pH 5, substrate **X**, amylase solution
    - Buffer solution at pH 7, substrate **X**, amylase solution
    - Buffer solution at pH 9, substrate **X**, amylase solution
3. Start a stopwatch as soon as the amylase is added
4. Use a pipette to remove a drop of solution every 10 seconds and add it to the spotting tile
5. Continue this process until the iodine stops changing from brown to black
6. Note down the time taken

Answer the following questions about the method:

(i) Identify substrate **X**.

(1)

(ii) State the reason for using buffer solution

(1)

(iii) Give two safety precautions needed when doing this investigation

(2)

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(c)

The table shows the results from the investigation carried out by the students.

pH	Time taken until no starch was detected / min
5	7.0
7	1.5
9	3.0

(i) Give **two** conclusions that can be made from the results.

(2)

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(ii) The stomach in the digestive system contains strong hydrochloric acid.

Suggest what the amylase activity would be in the stomach. Explain your answer.

(2)

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Question three:

a)

Complete the table with a (✓) or a (**X**) to show the products and reactants of aerobic respiration in animals.

	Product	**Reactant**
Oxygen		
Carbon dioxide		
Lactic acid		
Glucose		
Water		
Ethanol		

[2]

b)

Identify **three** different ways in which animals use the energy released by aerobic respiration.

_____

_____

_____

[3]